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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/371,747	08/10/99	GUSSELIN G	06171.105003

HM22/0226

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
1623	6

DATE MAILED: 02/26/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)	
09/371,747	Gosselin et al.	
Examiner	Group Art Unit	
L. E. Crane	1623	

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication .
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

☒ Responsive to communication(s) filed on 5/18/00 and 6/26/00 (2IDS's).

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-12 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-12 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 11 9(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4 & 5

☒ Notice of Reference(s) Cited, PTO-892

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Interview Summary, PTO-413

☐ Notice of Informal Patent Application, PTO-152

☐ Other _____

Office Action Summary

The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group 1600, Art Unit 1623.

No claims have been cancelled and no preliminary amendments filed as of the date of the instant Office action. An Information Disclosure Statement (IDS) received May 18, 2000 has been entered and the references supplied considered.

Claims **1–12** remain in the case.

The disclosure is objected to because of the following informalities:

In the disclosure the term "EC_{50}" is used repeatedly and appears to refer to a kind of biological activity, but examiner could not find within the disclosure (or within medical texts/dictionary immediately available) where this term is explicitly defined. Unless already defined (please indicate location), applicant is respectfully requested to provide a definition of this term at its first appearance within the disclosure.

Appropriate correction is required.

Claims **1 and 8–10** are rejected under 35 U.S.C. §112, first paragraph, while being enabled for the compounds tested within the instant disclosure (L-dA, L-dG, L-dC, L-dU, L-thymidine & L-dI, and binary mixtures thereof), does not reasonably provide enablement for the administration of any other L-nucleoside/L-nucleoside

prodrug or mixtures of an L-nucleoside/L-nucleoside prodrug with one or more other antiviral agent(s) to treat a mammal infected with hepatitis B virus. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

Claims **1-12** are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim **1**, line 3, the term "prodrug thereof" is indefinite because a definition of the substituents which make a particular prodrug of a specific L-2'-deoxynucleoside have not been provided: e.g. is the active ingredient the phosphorylated L-nucleoside or the L-nucleoside itself? This problem reoccurs in claims **2-9 and 11**.

In claim **1**, at line 7, the terms "CO-alkyl," "CO-aryl," "CO-alkoxyalkyl," "CO-aryloxyalkyl," and "CO-substituted aryl" are directed to either -- acyl -- moieties or to diradical moieties (e.g. is "CO-alkyl" actually -- $-(C=O)-(CH_2)_n-$ --). Because only the former alternative appears to have been envisioned within the disclosure, appropriate clarification { $(C_nH_{2n+1})-(C=O)-$? or the like} is respectfully requested.

In claim **1**, at lines 8-9, the term "phosphate derivative" is indefinite for failure to further define which "derivatives" are included within the metes and bounds of the claimed subject matter.

In claims **1, 8 and 9**, at lines 9, 9 and 10, respectively, the term "which may be optionally substituted" is incomplete because the "optional" substituents are not named.

In claim **1**, lines 6-9, the Markush group is incorrect; e.g. Markush groups are properly formulated with the term -- selected from the group consisting of [A], [B], ... **and** [R] --. Replacement of the term "or" with the term -- and -- in line 8 is respectfully requested. Alternatively, applicant may elect to rely only on the term "or;" i.e. deletion of the Markush preamble would also solve the problem.

In claim **2**, at lines 5-6, the term "a stabilized phosphate derivative (to form a stabilized nucleotide prodrug)" is incomplete because the structural requirements needed to meet the functional performance requirement have not been specified. This problem reoccurs in claims **3-7 and 11**.

In claim **8**, at line 2, the term "or more" is directed to subject matter without an upper limit and therefore renders the metes and bounds of the instant claim indefinite.

In claim **10**, at lines 2-3, the acronyms provided to define active ingredients are incomplete because the complete name or chemical structure of the ingredients to define the acronyms are not provided; e.g. -- 3'-deoxy-3'-azidothymidine (AZT)--.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. §101 which states that "whoever invents or discovers any new and useful process ...

may obtain a patent therefor ..." (Emphasis added). Thus, the same invention in this context, means an invention drawn to identical subject matter. *Miller v. Eagle Mfg. Co.,* 151 U.S. 186 (1894); *In re Ockert,* 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel,* 422, F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. §101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based on 35 U.S.C. §101.

Claims **1–12** are provisionally rejected under 35 U.S.C. §101 as claiming the same invention as that of claims **1–11 and 13** of copending Application No. **09/459,150** .

This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

The non-statutory double patenting rejection, whether of the obviousness-type or non-obviousness-type, is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent. *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969); *In re Vogel,* 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Van Ornam,* 686 F. 2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi,* 759 F.2d 887, 225 USPQ 645 (Fed. Cir 1985); and *In re Goodman,* 29 USPQ 2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 C.F.R. §1.78(d).

Effective January 1, 1994, a registered attorney or agent or record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 C.F.R. §3.73(b).

Claims **1-12** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim(s) **12 and 14-21** of copending Application No. **09/459,150** . Although the conflicting claims are not identical, they are not patentably distinct from each other because the method of treatment and the alleged active ingredients are directed to substantially overlapping subject matter.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

"A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent."

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States."

(e) the invention was described in a patent granted on an application to another filed in the United States before the invention thereof by applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent."

Claims **11 and 12 are** rejected under 35 U.S.C. §102(**b**) as being anticipated by **Weis et al. '101** (PTO-892 ref. **B**).

Applicant is referred to the chemical structures at column 22, lines 10-30, Example 25 at column 32 et seq, and Table 1 at column 34, lines 43-45 and associated descriptive text wherein the claimed compound, a prodrug 3', 5'-O-di-*p*-tolyl ester thereof, and a pharmaceutical composition thereof are disclosed.

Claims **11 and 12 are** rejected under 35 U.S.C. §102(**a**) and (**e**) as being anticipated by **Weis et al. '402** (PTO-892 ref. **A**).

Applicant is referred to Figure "7B," structure labeled "GCI-1037" and column 29, Table 6, at lines 12-13 wherein ß-L-2'-deoxyinosine (N = 28) is disclosed to have been included in a pharmaceutical composition subject to an *in vitro* test for activity against a known causative agent for malaria.

Claims **1-12 are** rejected under 35 U.S.C. §102(**b**) as being anticipated by **Medivir Aktiebolag '248 (Johannson et al.)** (PTO-1449 ref. **AO2**).

Applicant is referred to page 12, claims ***10, 11 and 14***.

The following is a quotation of 35 U.S.C. §103(**a**) which forms the basis for all obviousness rejections set forth in this Office action:

> "A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

Claims **1-10** are rejected under 35 U.S.C. §103(**a**) as being unpatentable over **Medivir Aktiebolag '248 (Johannson et al.)** (PTO-1449 ref. **AO2**) in view of **von Janta-Lipinski et al.** (PTO-892 ref. **U**) and **Lin et al.** (PTO-1449 ref. **CC2**).

The instant claims are directed to the treatment of hepatitis B viral infections in mammals including humans by the administration of a ß-L-2'-deoxynucleoside or prodrug thereof wherein the nucleoside is selected from the group consisting of ß-L-dA, ß-L-dG, ß-L-dI, ß-L-dC, ß-L-dT and ß-L-dU.

Medivir Aktiebolag '248 (Johannson et al.) is described in a rejection supra.

von Janta-Lipinski et al. discloses that certain ß-L-nucleotides and analogues thereof inhibit the activity of DNA polymerase derived from hepatitis B virus(HBV), a possible explanation of the activity of ß-L-nucleosides/nucleotides against HBV infections.

Lin et al. discloses the activity of certain ß-L-nucleosides against HBV *in vitro*.

The secondary references support the disclosure of the primary reference, namely that ß-L-nucleosides and related enantiomeric analogues are active anti-retroviral agents which are active against HBV.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to administer pharmaceutical compositions containing ß-L-nucleosides and related enantiomeric analogues to a host suffering from an HBV viral infection.

One having ordinary skill in the art would have been motivated to combine these references because all three references are directed to enantiomerically related compounds and their activity against HBV infections in mammalian cells.

Therefore, the instant claimed method of treating HBV by the administration of one or more ß-L-2'-deoxynucleotides would have been obvious to one of ordinary skill in the art having the above cited reference before him at the time the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. §103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. §1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. §103(c) and potential 35 U.S.C. §§102(f) or (g) prior art under 35 U.S.C. §103(a).

Papers related to this application may be submitted to Group 1600 via facsimile transmission(FAX). The transmission of such papers must conform with the notice published in the Official Gazette (1096 OG 30, November 15, 1989). The telephone numbers for the FAX machines operated by Group 1600 are **(703) 308-4556** and **703-305-3592** .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner L. E. Crane whose telephone number is 703-**308-4639** . The examiner can normally be reached between 9:30 AM and 5:00 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Gary Geist, can be reached at (703)-308-1701.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1600 receptionist whose telephone number is 703-**308-1235** .

LECrane:lec
02/25/01

L. Eric Crane
Patent Examiner
Group 1600